IFWO

RAW SEQUENCE LISTING   DATE: 09/20/2004
PATENT APPLICATION: **US/10/762,769**   TIME: 16:31:11

Input Set : **D:\Seqlist.txt**
Output Set: **N:\CRF4\09202004\J762769.raw**

```
 4 <110> APPLICANT: Melis, Anastasios
 5        Wintz, Hsu-Ching Chen
 7 <120> TITLE OF INVENTION: MODULATION OF SULFATE PERMEASE FOR
 8        PHOTOSYNTHETIC HYDROGEN PRODUCTION
11 <130> FILE REFERENCE: BERK-016CIP
13 <140> CURRENT APPLICATION NUMBER: 10/762,769
14 <141> CURRENT FILING DATE: 2004-01-21
16 <150> PRIOR APPLICATION NUMBER: 60/354,760
17 <151> PRIOR FILING DATE: 2002-02-04
19 <150> PRIOR APPLICATION NUMBER: 60/377,902
20 <151> PRIOR FILING DATE: 2002-05-02
22 <150> PRIOR APPLICATION NUMBER: 10/350,298
23 <151> PRIOR FILING DATE: 2003-01-22
25 <160> NUMBER OF SEQ ID NOS: 9
27 <170> SOFTWARE: FastSEQ for Windows Version 4.0
29 <210> SEQ ID NO: 1
30 <211> LENGTH: 411
31 <212> TYPE: PRT
32 <213> ORGANISM: Chlamydomonas reinhardtii
34 <400> SEQUENCE: 1
35 Met Glu Arg Val Cys Ser His Gln Leu Ala Ser Ser Arg Gly Arg Pro
36  1               5                  10                  15
37 Cys Ile Ala Gly Val Gln Arg Ser Pro Ile Arg Leu Gly Thr Ser Ser
38              20                  25                  30
39 Val Ala His Val Gln Val Ser Pro Ala Gly Leu Gly Arg Tyr Gln Arg
40          35                  40                  45
41 Gln Arg Leu Gln Val Val Ala Ser Ala Ala Ala Ala Ala Phe Asp
42      50                  55                  60
43 Pro Pro Gly Gly Val Ser Ala Gly Phe Ser Gln Pro Gln Gln Gln Leu
44 65                  70                  75                  80
45 Pro Gln Gln His Pro Arg Gln Pro Gln Ala Val Ala Glu Val Ala Val
46                  85                  90                  95
47 Ala Glu Ser Val Ser Ala Pro Ala Ser Ala Ala Pro Ser Asn Asp Gly
48              100                 105                 110
49 Ser Pro Thr Ala Ser Met Asp Gly Gly Pro Ser Ser Gly Leu Ser Ala
50          115                 120                 125
51 Val Pro Ala Ala Ala Thr Ala Thr Asp Leu Phe Ser Ala Ala Ala Arg
52      130                 135                 140
53 Leu Arg Leu Pro Asn Leu Ser Pro Ile Ile Thr Trp Thr Phe Met Leu
54 145                 150                 155                 160
55 Ser Tyr Met Ala Phe Met Leu Ile Met Pro Ile Thr Ala Leu Leu Gln
56              165                 170                 175
57 Lys Ala Ser Leu Val Pro Leu Asn Val Phe Ile Ala Arg Ala Thr Glu
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/762,769

DATE: 09/20/2004
TIME: 16:31:11

Input Set : D:\Seqlist.txt
Output Set: N:\CRF4\09202004\J762769.raw

```
58              180               185                190
59 Pro Val Ala Met His Ala Tyr Tyr Val Thr Phe Ser Cys Ser Leu Ile
60         195               200               205
61 Ala Ala Ala Ile Asn Cys Val Phe Gly Phe Val Leu Ala Trp Val Leu
62      210               215               220
63 Val Arg Tyr Asn Phe Ala Gly Lys Lys Ile Leu Asp Ala Ala Val Asp
64 225               230               235               240
65 Leu Pro Phe Ala Leu Pro Thr Ser Val Ala Gly Leu Thr Leu Ala Thr
66               245               250               255
67 Val Tyr Gly Asp Glu Phe Phe Ile Gly Gln Phe Leu Gln Ala Gln Gly
68               260               265               270
69 Val Gln Val Val Phe Thr Arg Leu Gly Val Val Ile Ala Met Ile Phe
70         275               280               285
71 Val Ser Phe Pro Phe Val Val Arg Thr Met Gln Pro Val Met Gln Glu
72      290               295               300
73 Ile Gln Lys Glu Met Glu Glu Ala Ala Trp Ser Leu Gly Ala Ser Gln
74 305               310               315               320
75 Trp Arg Thr Phe Thr Asp Val Val Leu Pro Pro Leu Leu Pro Ala Leu
76               325               330               335
77 Leu Thr Gly Thr Ala Leu Ala Phe Ser Arg Ala Leu Gly Glu Phe Gly
78               340               345               350
79 Ser Ile Val Ile Val Ser Ser Asn Phe Ala Phe Lys Asp Leu Ile Ala
80         355               360               365
81 Pro Val Leu Ile Phe Gln Cys Leu Glu Gln Tyr Asp Tyr Val Gly Ala
82      370               375               380
83 Thr Val Ile Gly Thr Val Leu Leu Leu Ile Ser Leu Val Met Met Leu
84 385               390               395               400
85 Ala Val Asn Gln Leu Gln Lys Leu Ala Arg Lys
86               405               410
89 <210> SEQ ID NO: 2
90 <211> LENGTH: 3873
91 <212> TYPE: DNA
92 <213> ORGANISM: Chlamydomonas reinhardtii
94 <400> SEQUENCE: 2
95 gcttagtacc taagcaaaaa taccaaagcc ttatcctgag ttgtcaacaa gaactccagc 60
96 ctgcgacgat gcaaagcctt tcttgagcgg gttgatggac tttgctttgt tatctgtcca 120
97 gtaagccacc agacactacc aagtagagta atccatttgt ataggtacag aatatggagc 180
98 gagtttgcag ccatcagctt gcctcgtcgc gagggaggcc atgcatcgct ggggtgcagc 240
99 ggtcgcccat ccgactaggg acttcaagcg ttgctcatgt gcaggtctct ccggcaggta 300
100 agcaccgcgc tcggcggcgt gtacacatgg ggcgtcagg ccaactgcgt ttgttggcta 360
101 tgcaaccgaa acaggccttg ggagatatca acggcaaaga ctgcaagtcg tggcgtctgc 420
102 agctgcggca gcggctttcg accctcctgg aggtgcgtgg cgtgagggct gcacgggtgc 480
103 gggttggcct ggaaaccaag cctcgccacg actacctgca acagcattgc ccgcatctcc 540
104 agcccctcac cctcgagtgc ctcccgaaga cctctatccc ctgcgcatca ttggttcggg 600
105 ggcgccgcct gcgggccttg ggcgctggct acgctgaccg cacggcacga cttggcacgg 660
106 cctggcgcgg cctgagcggc ccccccctc ctgatggccc cacgctttgc cgcccacgcc 720
107 gctccccgca ggtgtctccg ccgggttctc gcagccgcaa cagcagctgc cacaacagca 780
108 cccacgccaa ccacaggcgg tggcggaggt agctgtcgcc gagtcagtct cggcgcccgc 840
109 ttctgcggcg ccctccaatg atggctcgcc cacggcctcc atggacggcg gcccagctc 900
```

RAW SEQUENCE LISTING   DATE: 09/20/2004
PATENT APPLICATION: US/10/762,769 TIME: 16:31:11

Input Set : D:\Seqlist.txt
Output Set: N:\CRF4\09202004\J762769.raw

```
110 cggcctcagc gccgtgcccg ccgccgccac cgccaccgac ctcttctccg ccgcggcgcg 960
111 cctccgcctg cccaacctct cccccatcat cacctggacc ttcatgctct cctacatggc 1020
112 cttcatgctc atcatgccca tcaccgcgct gctgcaaaaa gcctcgctcg tgccgctcaa 1080
113 cgtcttcatc gcgcgcgcca ccgagccggt ggcgatgcac gcctactacg tcaccttctc 1140
114 ctgctcgctg atcgcggccg ccatcaactg cgtgtttggc ttcgtgctgg cctgggtgct 1200
115 ggtgcgctac aatttcgcgg ggaagaagat cctggacgcg gcggtggacc tgccgttcgc 1260
116 gctgccgacc tcggtggcgg gcctcacgct tgccacggtg tacggcgacg agttcttcat 1320
117 cggccagttc ctgcaggcgc agggcgtgca ggtgcgtgcg tatagcatag tggagtgtgg 1380
118 ttagcagctg ggggtccggc agtagttccc gccctagtga ggtcgaaact ataccagaag 1440
119 aagaggacga acatggggct atccagcaag ctcgtctagg gaaggaggag tttgggagaa 1500
120 cggtggggtg ggagggagag ggagggcgtt ggctgggagg gaagggtaag cgcgggaggga 1560
121 gatggtagca cggggcgttg gggacgcaga aggatgacag gcggctgcag ggaagggatg 1620
122 gggaagcgga gctggggaca gtgcgaagag ccgggagaga ggggaagttt gagtcaggaa 1680
123 gaggggctag agaggggcat gcggactcct gctgggattt aggtgcgtgc tcattgagga 1740
124 gcccttggaa tcagcggacg gaaacgtggc cgacggggtc tgccgagcac accaggctag 1800
125 ctagacgcgc ggttgggcaa cgagcagagc tgctgtgcgg ctatggatgg aaggcgatgc 1860
126 agcgagcatg tgcagtgaac attggtttga ggacagggga ctccgaggtt gcataggcgg 1920
127 gccgccactg tctctgccgc tagggtgact agctgcctcg aacctggcgg tggccccata 1980
128 cccgcagttg gaggatgctc cacgcgcttc agcttgccat gtctgggatc tgggtctgga 2040
129 cgcaatcagc gtgtgagggt ccaactctat atggaattat ggataccttc caactaccag 2100
130 cacgtaggct gccggaacgc ggctgaagcg gctggcctgc cccctcatcc tctcgttccc 2160
131 ctgttttttgt cccctgtcca cccaggtggt gttcacgcgg ctgggtgtgg tgatcgccat 2220
132 gatcttcgtg tccttcccct tcgtggtgcg caccatgcag cccgtcatgc aggtgagagc 2280
133 gcccaggagg cggagccatg gcgggttggg gcgggttggg gcgggttggg gcggggcgcg 2340
134 gatggggcgg cttgggagt aatgtggggc ggatggggtg gcagcctggc agggtatggg 2400
135 agcgagagga tagcggggac aggggacagg gaagggaagg gaaggggaag gatgccctat 2460
136 gcgagcaaag ggggtatggg aaccggcggt tggggctggg agcgacggga gcagggaggg 2520
137 agtgcacgga acgggggcaa ggcggacagg gtgagggagg gtgcaggccg gactgggatg 2580
138 ggtcatgtgt cctggtcggg ggtgtagccg tgggaggcgg gcaggcagcg tgtgttctgg 2640
139 cacggtgttt tggcgaaaga taccacggca tggtatgggg ccagttgggc agggaagaac 2700
140 cgttggacac gacttcgttg acagatctag ttcattgcac ccgggtcgca ccaagggtgg 2760
141 cggcgagccc ggcccggcac gtccgagtac cccggagccg taacgccgca acccgccttg 2820
142 ttgcgcccct tccctgctcc cctgctccgc ataccgtgca ccatgccctc tgccgccccc 2880
143 tcaggccctc aggccctcac ctcccccctca cctcctccta acgccttccc ctcgccttcc 2940
144 cttcccctcc caacgccacc acgtgcaaca ggaaatccaa aaggagatgg aggaggcggc 3000
145 atggtcgctg ggcgcctcgc agtggcgcac cttcacagac gtggtgctgc cgccgctgct 3060
146 gcccgcgctg ctgaccggca cggcactggc cttctcgcgc gcgcttggcg agttcggatc 3120
147 cattgtcatc gtgtcctcca actttgcctt caaggacctg atcgcgcccg tgctgatctt 3180
148 ccagtgcctg gagcagtacg actacgtggg cgccaccgtg atcggcacag tactgctgtt 3240
149 gatttcgctg gtgatgatgt tggcggtgaa ccagctgcag aagctggcgc gcaagtgagg 3300
150 ggctgaggcg tttgaggaga gtgggcgtct gcggaggcgc ttgtggcgca ggggcaggtg 3360
151 gaggaggttg cagggtgagg caggagtggc aggtggtgga gggtgcaggg cggggtgttg 3420
152 ggatgggatg ggatgggacc gtgggagggg tgggactttg ggtgggtggg agtgggtgct 3480
153 acgtattagg atatgggagg tggtatgcag ttgaaggggg gggtggcaat ctggacgggg 3540
154 actcactgtt tactaggcac gcatgtcgca ggagtggata tcgatgggtg tggggatgtc 3600
155 agcacgcttg gcttgagttg ggccatggga cccgggacta ggcttggttg cgagccgagc 3660
156 cagtcaccag ggagacgtac gagcgcacac agtgattacg gggattgatt aggcggcgaa 3720
157 ttgacgcaaa tccacggggg ctgtggcttg ggggaggcag ggattgagcg aaggacgcac 3780
158 tgcaagctca ggcagtcgca tgcccgtacc ctgcttctgg tccagtgtgg agacaagact 3840
```

RAW SEQUENCE LISTING   DATE: 09/20/2004
PATENT APPLICATION: US/10/762,769   TIME: 16:31:11

Input Set : D:\Seqlist.txt
Output Set: N:\CRF4\09202004\J762769.raw

```
159 ggcaatcgtg gtcctttgca attcatggcg cgc                        3873
161 <210> SEQ ID NO: 3
162 <211> LENGTH: 1984
163 <212> TYPE: DNA
164 <213> ORGANISM: Chlamydomonas reinhardtii
166 <400> SEQUENCE: 3
167 gcttagtacc taagcaaaaa taccaaagcc ttatcctgag ttgtcaacaa gaactccagc 60
168 ctgcgacgat gcaaagcctt tcttgagcgg gttgatggac tttgctttgt tatctgtcca 120
169 gtaagccacc agacactacc aagtagagta atccatttgt ataggtacag aatatggagc 180
170 gagtttgcag ccatcagctt gcctcgtcgc gagggaggcc atgcatcgct ggggtgcagc 240
171 ggtcgcccat ccgactaggg acttcaagcg ttgctcatgt gcaggtctct ccggcaggcc 300
172 ttgggagata tcaacggcaa agactgcaag tcgtggcgtc tgcagctgcg gcagcggctt 360
173 tcgaccctcc tggaggtgtc tccgccgggt tctcgcagcc gcaacagcag ctgccacaac 420
174 agcacccacg ccaaccacag gcggtggcgg aggtagctgt cgccgagtca gtctcggcgc 480
175 ccgcttctgc ggcgccctcc aatgatggct cgcccacggc ctccatggac ggcggcccca 540
176 gctccggcct cagcgccgtg cccgccgccg ccaccgccac cgacctcttc tccgccgcgg 600
177 cgcgcctccg cctgcccaac ctctccccca tcatcacctg gaccttcatg ctctcctaca 660
178 tggccttcat gctcatcatg cccatcaccg cgctgctgca aaaagcctcg ctcgtgccgc 720
179 tcaacgtctt catcgcgcgc gccaccgagc cggtggcgat gcacgcctac tacgtcacct 780
180 tctcctgctc gctgatcgcg gccgccatca actgcgtgtt tggcttcgtg ctggcctggg 840
181 tgctggtgcg ctacaatttc gcggggaaga agatcctgga cgcggcggtg gacctgccgt 900
182 tcgcgctgcc gacctcggtg gcgggcctca cgcttgccac ggtgtacggc gacgagttct 960
183 tcatcggcca gttcctgcag gcgcagggcg tgcaggtggt gttcacgcgg ctgggtgtgg 1020
184 tgatcgccat gatcttcgtg tccttcccct tcgtggtgcg caccatgcag cccgtcatgc 1080
185 aggaaatcca aaaggagatg gaggaggcgg catggtcgct gggcgcctcg cagtggcgca 1140
186 ccttcacaga cgtggtgctg ccgccgctgc tgcccgcgct gctgaccggc acggcactgg 1200
187 ccttctcgcg cgcgcttggc gagttcggat ccattgtcat cgtgtcctcc aactttgcct 1260
188 tcaaggacct gatcgcgccc gtgctgatct tccagtgcct ggagcagtac gactacgtgg 1320
189 gcgccaccgt gatcggcaca gtactgctgt tgatttcgct ggtgatgatg ttggcggtga 1380
190 accagctgca gaagctggcg cgcaagtgag gggctgaggc gtttgaggag agtgggcgtc 1440
191 tgcggaggcg cttgtggcgc aggggcaggt ggaggaggtt gcaggtgag gcaggagtgg 1500
192 caggtggtgg agggtgcagg gcggggtgtt gggatgggat gggatgggac cgtgggaggg 1560
193 gtgggacttt gggtgggtgg gagtgggtgc tacgtattag gatatgggag gtggtatgca 1620
194 gttgaagggg ggggtggcaa tctggacggg gactcactgt ttactaggca cgcatgtcgc 1680
195 aggagtggat atcgatgggt gtggggatgt cagcacgctt ggcttgagtt gggccatggg 1740
196 acccgggact aggcttggtt gcgagccgag ccagtcacca gggagacgta cgagcgcaca 1800
197 cagtgattac ggggattgat taggcggcga attgacgcaa atccacgggg gctgtggctt 1860
198 gggggaggca gggattgagc gaaggacgca ctgcaagctc aggcagtcgc atgcccgtac 1920
199 cctgcttctg gtccagtgtg gagacaagac tggcaatcgt ggtcctttgc aattcatggc 1980
200 gcgc                                                         1984
202 <210> SEQ ID NO: 4
203 <211> LENGTH: 1863
204 <212> TYPE: DNA
205 <213> ORGANISM: Chlamydomonas reinhardtii
207 <400> SEQUENCE: 4
208 cattcaattt gcagcgttcc taaaatggca agcacaacgc tgctccagcc cgcgcttggt 60
209 ctgccctcgc gggtagggcc tcgctcccct ctgtcgcttc ccaaaattcc tcgcgtgtgc 120
210 acgcacacta gtgctccctc tacctcaaag tactgcgact catcatcagt tatagagagc 180
211 acgctagggc ggcaaacatc ggttgccggg agaccatggc ttgcaccccg gcctgcgcct 240
```

RAW SEQUENCE LISTING   DATE: 09/20/2004
PATENT APPLICATION: **US/10/762,769**   TIME: 16:31:11

Input Set : **D:\Seqlist.txt**
Output Set: **N:\CRF4\09202004\J762769.raw**

```
212 caacaaagcc gaggcgacct actggtctcc aaatcggggg cagcaggagg catgggcgcc 300
213 catggagggg gcttagggga accggtcgat aattggatca agaagctact cgttggtgtc 360
214 gcggcggcgt acatcggctt ggtcgtgctg gtgcccttcc tgaatgtctt cgtccaggcg 420
215 ttcgccaagg gcatcattcc cttcctggag cactgcgcgg acccggactt tctgcacgca 480
216 ctcaagatga cgctgatgct ggcgttcgtg acggtgccgc tcaacacggt gtttggcacg 540
217 gtggccgcga tcaacctcac gcgcaacgag ttccccggca aggtgttcct gatgtcgctg 600
218 ctggacctgc ccttctccat ctcgcccgtg gtgactggcc tgatgctcac gctgctgtac 660
219 ggccgcaccg gctggttcgc ggcgctgctg cgggagaccg gcatcaacgt ggtgttcgca 720
220 ttcacgggca tggccctggc caccatgttt gtgacgctgc cgttcgtggt gcgcgagctg 780
221 atccccatcc tggagaacat ggacctgtcg caggaggagg cggcgagaac gctgggggcc 840
222 aacgactggc aggtgttctg gaacgtgacg ctgcccaaca tccgctgggg cctgctgtac 900
223 ggcgtgatcc tgtgcaacgc ccgagccatg ggcgagttcg gagccgtgtc cgtcatctcg 960
224 ggcaacatca tcggccgcac gcagacgctg acgctgttcg tcgagtccgc ctacaaggag 1020
225 tacaacacgg aggcggcgtt cgcggcggct gtgctgctga gcgcgctggc gctgggcacc 1080
226 ctgtggatca aggacaaggt ggaggaggcg gcggcggcgg agagccgcaa gtagagagga 1140
227 gcaggcggcg tcggcagcgg cggcagtggc agcggcagcg gcggagagcg gcagctggag 1200
228 aggagcaggc ggtggcggcg gagcggcgga aatagagagg tgcagcaagg aggcaggcgc 1260
229 cgacgcgagg ggagggcgtg gtggtgggct tgcgtgggtg cttggtccgt ggccagggtg 1320
230 cctggcctgg gtagttggtg tgtgggtgaa gctgattcct gtttgggtga ggcggccgag 1380
231 ttcctgaagg aagcaaggaa ggacagtgcc gcagtgacca gcgggtaatg gtaagggagc 1440
232 tgacacgtgt ggcgttctgt tgctggtcgc cgcatgctta acgcagcggg agcagcttct 1500
233 ctgtctgatg tctaacgggg gcgttgtatg ctgataatag acggagggcg aagggagcag 1560
234 gcgcggttca gatggggtaa aagctgttgg aaatcaacac gtgcagcggg tgggttgcat 1620
235 ttgtgatcac tggacgttct gagtggtccg tgcgcctata gcgcgtgctg tgcatatata 1680
236 cgcgcgccgg cgcataaaac atgactgcat gtgtcggtgt tgacggtaca gttatgccgt 1740
237 gccccgtttt acaagcggga tagaggcaca ctccacgtag tatgcattga gcccagtaga 1800
238 ctctggtcag aaggccggta aatttacatg tgtcgtggtg aaccctgtaa gtcatggccc 1860
239 aag                                                                 1863
241 <210> SEQ ID NO: 5
242 <211> LENGTH: 2253
243 <212> TYPE: DNA
244 <213> ORGANISM: Chlamydomonas reinhardtii
246 <400> SEQUENCE: 5
247 gtacttcaat tgtcagaatg gcgtcgctgc tcgctcaaac aacatcgcgc cttggcgctc 60
248 gcccagctgc gcaagctggc cctgtcgccc aaatggcacc gatggcaagc cgagtgcagc 120
249 cggcgatgcc tagcgcgctg ctcccactgc acgccagagc gacaacaact tcagtcgctt 180
250 gccgggcagc cagcatcgac aaacctgtcg tttacactcc tcgagattcg tcgcaacagt 240
251 cctccaatgg ggcaggagaa gtgtccatgt ccatatcatc catggacgag gttggaccct 300
252 cttatgaggg aatcattaca gacgcgccta cacgaccaac ggggctttat gtgcgggtgc 360
253 gcaacatggt gaagcacttc agcaccgcca aaggcctgtt cagggcggtg gacggcgtgg 420
254 acgtggacat cgagcccagc tccatcgtgg cgctgctggg gcccagcggc agcggcaaga 480
255 ccacattgct gcgcctcatt gcaggcctgg agcagcccac gggcggcaac atctactttg 540
256 acgacacgga cgcgaccaac ctgtccgtcc aggaccgcca gatcggcttc gtgttccaga 600
257 gctatgcgct gttcaaccac aagacagttg cggagaacat caagtttgga ctggaggtgc 660
258 gcaagctcaa catcgaccac gacaagcgcg tggcggagct gctggcgctg gtgcagctca 720
259 ccggcctggg cgaccgctac ccgcgccaac tgtcgggcgg ccagcggcag cgtgtggcgc 780
260 tggcgcgcgc cctggcctcc aacccgcggc tgctgctgct ggacgagccc tttggcgcgc 840
261 tggacgcggt ggtgcgcaag cagctgcgca cggggctgcg cgagatcgtg cgcagcgtgg 900
262 gcgtgaccac catcattgtg acgcacgacc aggaggaggc gttcgacctg gcggacaagg 960
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 09/20/2004
PATENT APPLICATION: **US/10/762,769**   TIME: 16:31:12

Input Set : **D:\Seqlist.txt**
Output Set: **N:\CRF4\09202004\J762769.raw**

<u>**Please Note:**</u>
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:8; Xaa Pos. 438

VERIFICATION SUMMARY   DATE: 09/20/2004
PATENT APPLICATION: **US/10/762,769**   TIME: 16:31:12

Input Set : **D:\Seqlist.txt**
Output Set: **N:\CRF4\09202004\J762769.raw**

L:445 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:432